

Application Number 10/672,035  
Amendment dated November 9, 2005  
Reply to Office Action of August 24, 2005

REMARKS

The Applicants note that the Office Action Summary does not indicate whether the drawings filed in the application are acceptable. Confirmation of their acceptability is respectfully requested.

Claims 1-13 and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Lehr, *et al.* (U.S. Patent Number 6,803,612). Claims 7-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (U.S. Patent Number 6,172,896). Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee. In view of the amendments to the claims and the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

In the present invention as claimed in claims 1-6, a fuse arrangement includes first and second fuses having first and second ends. The first ends of the first and second fuses are disposed at a cutting region. The first and second fuses have cutting portions at the first ends of the first and second fuses. The cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first and second fuses outside the cutting region.

Claims 1-6 are amended to clarify certain features of the invention. Specifically, the claims are amended to recite that the first and second fuses have cutting portions at the first ends of the first and second fuses, and the cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first and second fuses outside the cutting region.

In the present invention as claimed in claims 7-10, a fuse arrangement includes first, second, third and fourth fuses each having first and second ends. The first ends of the first to fourth fuses have widths substantially the same as those of the second ends of the first to fourth fuses. The first ends of the first to fourth fuses are disposed at a cutting region. The first to fourth fuses have cutting portions at the first ends of the first to fourth fuses. The cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first to fourth fuses outside the cutting region.

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Claims 7-10 are amended to clarify certain features of the invention. Specifically, the claims are amended to recite that the first ends of the first to fourth fuses have widths substantially the same as those of the second ends of the first to fourth fuses, the first to fourth fuses have cutting portions at the first ends of the first to fourth fuses, the cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first to fourth fuses outside the cutting region.

In the present invention as claimed in claims 11-13, a fuse arrangement includes a first fuse group including a plurality of first fuses each having a first end and a second end. The fuse arrangement further includes a second fuse group including a plurality of second fuses each having a first end and a second end. The first ends of the first and second fuses have widths substantially the same as those of the second ends of the first and second fuses. The first ends of the first and second fuses are disposed at a cutting region. The first and second fuses have cutting portions at the first ends of the first and second fuses. The cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first and second fuses outside the cutting region.

Claims 11-13 are amended to clarify certain features of the invention. Specifically, the claims are amended to recite that the first ends of the first and second fuses have widths substantially the same as those of the second ends of the first and second fuses, the first and second fuses have cutting portions at the first ends of the first and second fuses, and the cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first and second fuses outside the cutting region.

In the present invention as claimed in claims 22-24, a semiconductor memory device includes a fuse box which further includes first and second fuses each having a first end and a second end. The first ends of the first and second fuses are disposed at a cutting region along a row direction and have widths substantially the same as those of the second ends of the first and second fuses. The first and second fuses have cutting portions at the first ends of the first and second fuses. The cutting portions are disposed in the cutting region and have widths

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substantially the same as portions of the first and second fuses outside the cutting region.

Claims 22-24 are amended to clarify certain features of the invention. Specifically, the claims are amended to recite that the first and second fuses have widths substantially the same as those of the second ends of the first and second fuses, the first and second fuses have cutting portions at the first ends of the first and second fuses, and the cutting portions are disposed in the cutting region and have widths substantially the same as portions of the first and second fuses outside the cutting region.

*Lehr, et al.* discloses that electrical connecting elements disposed on a substrate surface 10 an electrical connecting element has a first lead 80 and a second lead 85. Electrical connecting elements that have a first state or a second state are also referred to as fuses. The electrical connecting elements 15 and 20 are connected to interconnects 40 and 45, respectively. The entire electrical connecting element 15, 20 is within the cutting region, and thus does not disclose a portion of the electrical connecting element outside the cutting region having substantially the same width as the portion within the cutting region.

Therefore, *Lehr, et al.* fails to teach or suggest a fuse arrangement that includes first and second fuses having cutting portions at first ends of the first and second fuses, and the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first and second fuses outside the cutting region, as claimed in claims 1-6. *Lehr, et al.* further fails to teach or suggest a fuse arrangement that includes first to fourth fuses having cutting portions at first ends of the first to fourth fuses, the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first to fourth fuses outside the cutting region, as claimed in claims 7-10. In addition, *Lehr, et al.* fails to teach or suggest a fuse arrangement that includes first and second fuses having cutting portions at first ends of the first and second fuses, and the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first and second fuses outside the cutting region, as claimed in claims 11-13.

*Lehr, et al.* fails to teach or suggest the elements of the invention set forth in the

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amended claims. Therefore, it is believed that the amended claims are allowable over the cited reference, and reconsideration of the rejection of claims 1-13 under 35 U.S.C. 102(e) as being anticipated by Lehr, *et al.* is respectfully requested.

Lee discloses a first fuse group 221, 222, 223 and a second fuse group 224, 225, 226. The fuses of the first fuse group 221, 222, 223 have narrow ends 221a, 222a, 223a, wide central portions 221b, 222b, 223b and wide ends 221c, 222c and 223c. The second fuse group 224, 225, 226 have wide ends 224a, 225a, 226a, wide central portions 224b, 225b, 226b, and narrow ends 224c, 225c, 226c. The laser fuses 221, 222 and 223 of section 231 include wide ends 221c, 222c and 223c and the laser fuses 224, 225 and 226 of section 232 include wide ends 224a, 225a, 226a are blown by a laser beam according to a fusing program. Therefore, one end of the fuse is wider than the other end of the fuse and the narrow ends 221a, 222a, 223a, 224c, 225c, 226c are not the same width as the wide ends 221c, 222c, 223c, 224a, 225a, 226a in the sections 231 and 232.

Therefore, Lee fails to teach or suggest a fuse arrangement that includes first ends of first to fourth fuses having widths substantially the same as those of second ends of the first to fourth fuses, the first to fourth fuses having cutting portions at the first ends of the first to fourth fuses, and the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first to fourth fuses outside the cutting region, as claimed in claims 7-10. In addition, Lee fails to teach or suggest a fuse arrangement that includes first ends of first and second fuses having widths substantially the same as those of second ends of the first and second fuses, the first and second fuses having cutting portions at the first ends of the first and second fuses, and the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first and second fuses outside the cutting region, as claimed in claims 11-13. In addition, Lee fails to teach or suggest a semiconductor memory device including a fuse box that includes first and second fuses having widths substantially the same as those of second ends of the first and second fuses, the first and second fuses having cutting portions at the first ends of the first and second fuses, and the cutting portions being disposed in a cutting region and having widths substantially the same as portions of the first and second fuses outside the cutting

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region, as claimed in claims 22-24.

Lee fails to teach or suggest the elements of the invention set forth in the amended claims. Therefore, it is believed that the amended claims are allowable over the cited reference, and reconsideration of the rejection of claims 7-13 under 35 U.S.C. 102(e) as being anticipated by Lee and claims 22-24 under 35 U.S.C. 103(a) as being unpatentable over Lee is respectfully requested.

In view of the amendments to the claims and the foregoing remarks, it is believed that, upon entry of this Amendment, all claims pending in the application will be in condition for allowance. Therefore, it is requested that this Amendment be entered and that the case be allowed and passed to issue. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,



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